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THE DIAGNOSIS OF EMPYEMA OF THE ACCESSORY NASAL CAVITIES.

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Lennox Browne has confessed that during the seven years (1866-1873) in which he was associated with Morrell Mackenzie he had never seen a case of empyema diagnosed as due to disease of the antrum or of any other of the accessory nasal cavities. In the light of the extraordinary developments of recent years in the diagnosis and treatment of these affections, it is difficult to realize that only a short time past the whole domain was practically a terra incognita. The subject has been so thoroughly studied and the methods of diagnosis so carefully systematized that we are now able to recognize not only an isolated suppuration, but a combined empyema as well and to determine in the latter case with a great degree of precision which of the various accessory cavities are involved. As the subject is too vast, however, to be considered here in its entirety, we shall confine ourselves in the present to a few remarks on the diagnosis of the affections under discussion, devoting ourselves almost wholly to the chronic form of suppuration, as it is in the chronic stage that we first see the great majority of cases.

Subjective symptoms alone are in sinus disturbances diagnostically of very little value. It has been frequently asserted that one of the most constant symptoms of sinus disease is pain, especially of a neuralgic nature, and that its seat is important in determining the localization of the affection; that pain in the supraorbital region points to the frontal sinus; in the infraorbital region and especially in the fossa canina to the antrum; in the inner corner of the eye to the ethmoidal labyrinth and in the occipital region to the sphenoidal sinus. This is all absolutely fallacious. In the first place pain is by no means a constant accompaniment of sinus disease. In a very large percentage, especially of chronic cases, pain is entirely absent and in those cases in which it is present even when its intensity is the most distressing symptom its localization almost never gives a clew to the seat of the suppuration. It has happened not a few times, fortunately less often of late, that an abundant purulent discharge from the nose and severe frontal sinus, which was thereupon trephined, only to be found healthy, the seat of disease being one of the other cavities. Nevertheless pain is a very frequent accompaniment of sinus disturbance and if the other and more reliable symptoms to which we shall presently refer are likewise present, it gives added strength to our diagnosis. Above all in those cases of obstinate neuralgia which fail to yield to the various antineuralgic agents and in which a refractive error or accommodative weakness is excluded we should always bear the possibility of a sinus affection in mind. The neuralgia will then often be found due to a hitherto unsuspected empyema, unsuspected because there had never been any nasal discharge, or because the slight discharge, in many cases into the throat, had been overlooked.

Percussion and palpation, which, of

course, are confined to the antrum and the frontal sinus, are too unreliable to be of any value in doubtful cases and are not necessary in others. *Fetor* is often entirely absent. When present it generally distresses the patient far more than it affects his surroundings, differing radically in this respect from ozena. In ozena the patient is almost always in blissful ignorance of the sweetish, nauseating stench he disseminates. In sinus suppuration, as a rule, the fetor, while neither characteristic nor especially offensive to the patient's surroundings, is often a source of great mental distress to the patient himself, who imagines his presence loathsome (subjective kakosmia). Not infrequently, as in a case recently under our observation, this intolerable odor in the patient's nostrils is the only symptom for which he seeks relief.

Transillumination of the antrum was introduced by Heryng as an aid in the diagnosis of disease of that cavity. The antra are illuminated by means of a small incandescent lamp placed in the mouth, patient and observer being in a darkened room. If both antra be healthy, infraorbital light-crescents, equal in size and intensity, appear on the cheeks. Moreover the red reflex from both pupils, if present, is equally bright and the patient has, if any, an equal subjective sensation of light in both eyes. If one of the cavities be affected, the corresponding crescent is diminished in extent and brightness, the pupillary reflex is duller and the subjective light sensation is fainter than on the healthy side. While Ziem asserts that illumination varies in proportion as the antrum is filled with pus and may be virtually useless where there is but little, Lichtwitz, Hajek and Bosworth insist that after the emptying of the cavity the area of translucency does not increase and believe for that reason that the opacity is due more to the thickening of the infiltrated mucoperiostal lining of the cavity than to the presence of pus in it. Transillumination of the frontal sinus is effected likewise by means of a small electric lamp placed in the inner angle of the closed eye and pressed upward against the orbital plate. As in the antra unilateral diminished brightness points to a morbid process in the corresponding cavity. As to the diagnostic value of transillumination, while error can easily arise in both cases from the well known frequent asymmetry of the cavities, which are often unequal in size and in the thickness of their walls, it cannot be denied that it often gives us trustworthy evidence of sinus disturbance and is thus not without significance as an adjunct to our other methods of diagnosis.

Discharge.—Of far greater importance than all the diagnostic signs thus far enumerated is the nasal discharge and the condition of the nose itself. The discharge, which varies greatly in quantity, is usually of very fluid consistence, opaque, milky to pale yellow in color, and as stated, odorless, slightly offensive or fetid. From its character, though, we cannot draw any conclusions as to its origin. These we can draw, however, from a single circumstance, namely, that the flow is unilateral. This it always is, except in the relatively rare cases of bilateral empyema. So important is this that, in any given case of unilateral nasal suppuration, to exclude the presence of a rhinitis blenorrhoica, tuberculous, and syphilitic caries and of a foreign body is all that is necessary in order to establish the diagnosis as probable sinus suppuration.

The same principle applies to the *condition of the nose* itself. Symmetrical bilateral turbinal hypertrophy, bilateral polypi, etc. are not indicative of sinus trouble, as they can be taken to be the product of a simple chronic catarrh, just as the bilateral swelling and hyperemia of the vocal cords arouse no suspicion beyond that of a laryngeal catarrh, whereas the same appearance unilaterally at once leads us to look for tuberculosis, lues, or some other deep-seated affection. Analogously unilateral polypi, one hypertrophied middle turbinal and circumscript hypertrophied patches on the septum cannot well be the result of a general catarrhal condition of the nose, but point in no uncertain way to sinus disease, of which, as Gruenwald in his monograph on the subject first pointed out, they are the result not the cause. To use Lennox Browne's words, they are "the actual outcome of changes in the mucosa from saturation with sinus discharges."

Let us now take a given case, in which the patient comes to us complaining for instance of headaches and a more or less constant nasal discharge. If, in spite of the fact that there is no edema of the lids, no swelling in the inner corner of the eye above the canthus, no fistula in that region, no dental caries or alveolar necrosis, nor any other patent manifestations of sinus suppuration, we nevertheless suspect it, the first glance into the nose strengthens our suspicions. Whereas one side may be approximately normal, the other is filled with polypi and granulations, the middle turbinal shows polypoid hypertrophy, and from underneath it oozes a thin layer of yellowish pus. In all probability we have to deal therefore with an empyema, either isolated or combined. To reach any conclusion, we must next determine whence the pus comes. Having first of all removed with snare and forceps the entire mass of polypi and granulations and in addition the anterior end of the hypertrophied middle turbinal, we now have an unobstructed view of the nose. Knowing that the anterior series of accessory cavities (antrum, frontal sinus, and anterior portion of the ethmoidal labyrinth) open into the nose in the hiatus semilunaris under the forward part of the middle turbinal, i. e. into the middle meatus, and that the posterior series (sphenoidal sinus and posterior potrion of the ethmoidal labyrinth) open into the nose by way of the fissura olfactoria, we remove carefully whatever pus is in the nose and allow a short time to elapse. If pus now reappears in the middle meatus, we conclude that it comes from one of the anterior series of cavities, if in the fissura olfactoria or above the posterior end of the middle turbinal, that its origin is one or both of the posterior series.

Let us suppose pus to appear as stated, in the middle meatus. This being indicative of a suppurative process in the antrum or the frontal sinus or the anterior ethmoid or in two of them or in all three, we must now discover which of these cavities are the source of the discharge. The antrum being of the three the one most easy of access, to it we first turn our attention. As the outlet of the frontal sinus is in its lowest and that of the antrum in its highest part, an erect position of the head favors the escape of fluid from the former and checks it from the latter, while vice versa, if the head be inclined strongly forward, the outlet of the frontal sinus is no longer in its lowest part and the escape from it is retarded, while that from the antrum is favored. Let us assume, however, that in our case, as in most, this procedure gives a doubtful result. There remains then but one method, the best and surest of all, as well as the only infallible one, the exploratory irrigation of the antrum. The most conservative way of accomplishing this is by means of a bent canula introduced into the cavity through the ostium maxillare or one of the accessory ostia. But in very many cases this method is technically impracticable and we then have recourse to the exploratory needle. Attached to a syringe is a strong sharp needle with which the nasal wall is punctured in the uppermost part of the inferior meatus. If on irrigating the cavity several times the irrigating fluid always reescapes clear, we can be certain that the antrum is not the seat of an empyema and that the pus observed in the middle meatus had its origin in one or both of the remaining cavities of the anterior series. If on the other hand the irrigating fluid return mixed with pus, we can be equally certain in our diagnosis of antral suppuration, either isolated or combined with that of the frontal sinus or anterior ethmoid or both. The only possible source of diagnostic error is in those rare cases in which a vertical septum divides the cavity into an anterior and posterior compartment. If exploratory irrigation here show a healthy anterior compartment, we may erroneously conclude that the entire antrum is unaffected. Otherwise, as stated, the method is infallible. The exploratory puncture is a simple, painless procedure, attended by a single danger. If the nasal wall be punctured in the middle meatus, there is a possibility of penetrating the orbit and for this reason we make the puncture in the inferior meatus. The danger to which we have reference lies elsewhere; if as is sometimes the case, the lower part of the antrum be very narrow, the needle can pierce both antral walls and appear in the mucous lining of the cheek, which immediately swells when the irrigating fluid is forced through the needle. With a little care, however, this unpleasant occurrence can be avoided, and in a number of dozen exploratory punctures of the antrum we have never had an experience of this sort.

Having thus diagnosed a suppurative process in the antrum, we are by no means certain that the pus originally observed in the middle meatus originated entirely there. It may have come in part, in accordance with the anatomical relations, from the frontal sinus and anterior ethmoid. In other words, have we an isolated antral empyema or a combined empyema? Our next step is the exploration of the frontal sinus. The anterior end of the middle turbinal having been previously removed, there is seldom any difficulty in introducing a soft probe into the sinus, whereupon, in case pus be in the cavity, it will appear immediately upon the withdrawal of the probe. To make assurance doubly sure, by means of a canula and syringe the cavity is now irrigated. If the irrigating fluid reappear mixed with pus, the diagnosis of frontal sinus suppuration is established. It is needless to state that previous to the exploratory irrigation both the antrum and the nose must be freed from discharge. Of the anterior series we still have the anterior ethmoid. Is it too partly responsible for the pus originally seen in the middle meatus? To answer this we have merely to irrigate the antrum and the frontal sinus and carefully cleanse the nose. In case pus then reappears within a few moments in the middle meatus, it cannot well have come from either of these two cavities and we are justified in assuming per exclusionem that it had its origin in the anterior ethmoid.

So much for the differential diagnosis of the anterior series. There still remains the posterior series, the sphenoid and the posterior ethmoid. As stated above, pus appearing in the fissures olfactoria points to a suppurative process in one or both of these cavities. To follow the discharge to its source, an unobstructed view of the anterior wall of the sphenoidal sinus and if possible of its ostium is essential. This condition is fulfilled only in exceptional cases, owing to the narrowness of the olfactive slit and it is therefore necessary as a rule first to remove the posterior portion of the middle turbinal, the anterior portion having been previously resected. If we now see pus oozing from the ostium of the sinus or on its anterior wall, we have to deal with a sphenoidal empyema and not even irrigation of the cavity is required to confirm our diagnosis. To determine whether it is combined with a suppuration of the posterior ethmoid we need do nothing more than to cover the sphenoidal ostium with a plug of cotton. If this become saturated with pus appearing from in front of it, the discharge cannot have come from the interior of the occluded sphenoid but per exclusionem must have come from the only remaining cavity of the posterior group, the posterior ethmoid, and the affection is therefore, as regards the posterior series, a combined spheno-ethmodal suppuration. We have thus briefly outlined the course to be pursued, in any given case of suspected empyema, in order to arrive at an exact diagnosis. It is true that we can often dispose with several of the procedures here enumerated and can reach our conclusions more easily and more directly. In general, however, days and often weeks of painstaking effort on lines similar to those sketched above are necessary and we have come to look with distrustful eyes upon those who profess to diagnose complicated sinus suppuration at first or second glance.

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CLINICAL LECTURE—PLAGUE.

By Dr. Wm. Watt Kerr, Professor of Clinical Medicine, University of California.

At the opening of a new session it is customary to take as the topic for the introductory lecture some subject germane to the chair but which cannot be presented to the class in the usual way. This year I thought it well to call your attention to the subject of plague because several cases have been reported in this city; and when the city is threatened with an epidemic of any kind, it is only right that students, attending hospitals and dispensary patients, should be warned to be on the outlook for cases of the disease with which they are liable to come in contact and might overlook. I cannot show you any case of plague this morning, but through the kindness of the Public Health Bureau in Washington, D. C., I am able to exhibit some microscopic slides, made from cultures inoculated with plague material obtained from the San Francisco cases, and also some sections of the spleen of a guinea pig which died from the effects of the inoculations.

Plague is not a new disease. Thucydides describes an epidemic that destroyed nearly one-third of the population of Athens about 425 B. C.; Livy speaks of an epidemic in Africa about 150 years later; and it occurred in Europe at intervals throughout the early centuries of the Christian era. In the fourteenth century there were several epidemics in the different countries of Europe, during which more than 25,000,000 people died from the disease. The history of this reads like the pages of a horrid romance.

The plague raged so fatally that there were not men enough to bury the dead, and the bodies were cast into trenches or even into the rivers which had been consecrated to the purpose of burial. Escape seemed to be impossible, the dread disease raged by sea and land with equal severity, and stories are told of ships, with their crews dead and rotting on their decks, drifting ashore and carrying death wherever they struck. A religious frenzy broke out and many having joined the order of Flagellants, went in bands from city to city scourging themselves in the hope of appeasing an angry God, but only spreading the disease until they were suppressed by papal threats of excommunication. As usual the Jews suffered persecution so as to make atonement for the sins of the people, and there was hardly a city in Europe where they were not subjected to agonizing torture. In the town of Mayence alone 12,000 were murdered. After this there was the great plague of London in 1665, when 68,596 in a population of 460,000, fell victims to the disease. The present epidemic commenced in Tonkin in 1893, whence it was conveyed to Hong Kong and Bombay, and has extended to different parts of the world from these centers. Since the object of this lecture is mainly to direct attention to the clinical aspects of the disease we shall discuss these first; but allow me to preface a detailed description of the symptoms by a few general statements in correction of some wrong impressions that seem to prevail: 1. The popular idea that plague when imported into a town spreads rapidly is erroneous. On the contrary the slow, gradual way in which the malady, if unopposed, extends through the locality where it first appears is one of the characteristics of the disease, and sometimes gives rise to false ideas of security from the belief that it is dying out. 2. The term "bubonic" is misleading because in many cases the bubonic swellings either are absent or so insignificant as to be incapable of clinical demonstration. 3. There are at least four distinct varieties of plague—bubonic, pneumonic, septicemic and ambulant or pestis minor. Each one of the graver types of the disease may exist alone or in combination with the others. It is important to remember this because a failure to recognize the pneumonic or ambulant type has caused the earlier cases in an epidemic to be overlooked, and prevented the adoption of precaution which might have arrested the trouble at the very outset.

General Symptoms of Plague.—All varieties of plague have some symptoms in common. There is a rigor followed by rapid rise in temperature to 102° or 106°; on the third or fourth day a fall in the temperature occurs and the patient may die or recover; but more frequently the pyrexia again increases and the temperature remains high until the seventh or ninth day when it drops by crisis. Possibly this second rise is due to the occurrence of secondary affections rather than to the direct influence of pest toxins. The pulse rate is always increased and the tendency is toward a diminution in force. The respirations are rapid, in proportion to the fever and pulse. The patient has severe headache, complains of lassitude and pain all through the body, the voice is husky, the words are pronounced in a hesitating, staccato manner, and the sentence is frequently left unfinished. He has an anxious, vacant expression, the eyes are injected and open, he suffers from vertigo and staggers about in an aimless way like a person intoxicated or under the influence of a hypnotic. As the disease progresses he may become delirious or apathetic. The tongue at the early stage is red at the tip and margins, but otherwise covered with a thick creamy coat, later on the coating becomes yellow or brown in color, but the edge and tip remain red. The bowels as a rule are constipated. Hemorrhages, both internal and external, are by no means uncommon; indeed we may have subcutaneous hemorrhages, either as petechiæ or ecchymoses, epistaxis, and hematuria just as we occasionally have them in small-pox and measles. It was on account of these hemorrhages that the disease was described as the " black death." The above appearance may be observed to a greater or less extent in all forms of plague, and each variety has its own special features superadded.

BUBONIC VARIETY.—Buboes are present in cases of this class and are most commonly situated in the groin, axilla, neck and popliteal space. The swelling generally begins within twenty-four hours after the fever, sometimes they are single and about the size of an almond or walnut, but they may be as large as a hen's egg, and are always very painful. Groups of glands may be swollen and matted together, making a large doughy painful mass, and naturally these will produce pressure symptoms which will vary in gravity with the importance of the organ pressed upon. There is always more or less edema around the mass from pressure on the veins. About the eighth day the swelling begins to disappear by resolution or suppuration, and this latter process is frequently accompanied by gangrene and sloughing of the skin over the bubo.

PNEUMONIC VARIETY.—The general symptoms are practically those already described. The dyspnea is very great. The physical signs are those of bronchopneumonia for which it is very likely to be mistaken as the bubonic swelling are either entirely absent or only appear late in the disease. The constitutional symptoms however are much more severe than in a case of ordinary pneumonia, but the absolute differential diagnosis must be made by examination of the sputum which contains almost a pure culture of plague bacilli. They may be mistaken for diplococci of pneumonia, especially as they are found mixed with diplococci, staphylococci and streptococci, but the pest bacillus is completely decolorized by the Gram method while the others retain the stain.

SEPTICEMIC VARIETY.—The general symptoms are such as have been described already, but they are very intense from the beginning of the sickness. Hemorrhages in the early stage are more frequent than usual, and the bacilli are present in the blood early and in great numbers.

AMBULANT VARIETY.—This is also described as pestis minor. The constitutional symptoms, swollen glands, and coated tongue are present as in the other varieties, but they are so mild that they may be overlooked, and have been mistaken for mumps or syphilis. These cases however have been followed by epidemics of the more severe form, and examination of the blood has revealed the presence of the characteristic bacillus.

THE INFECTING AGENT.—It is generally accepted that the bacillus discovered by Yersin and also by Kitasato is the cause of plague. The micro-organism is described as a cocco-bacillus, which in the early stages is spheroidal, but increases in length as it developes. It is aerobic, stains easily with the aniline dyes, the best re-agent being a one per cent solution of thionin carbolised. The coloring is more intense at the extremities, leaving an intermediate portion less deeply stained or almost entirely free from pigment, so that the bacillus is said to exhibit bi-polar staining. The microbe can be destroyed by a temperature of 100° C in a few minutes; a one per cent solution of carbolic acid or of lysol destroys it in ten minutes; sulphuric acid 1 in 1000 in five minutes; hydrochloric acid 1 in 1000 in thirty minutes; direct sunlight in three or four hours. It must be remembered that these conclusions are reached from investigations in the laboratory and under conditions which do not exist clinically. While, therefore, they are of the greatest value as indicating the vitality of the micro-organism and the modes in which it may be combated, exactly the same results must not be expected under external conditions which are beyond control. There is a great variability in the virulence of the bacillus, indeed Yersin found it living and absolutely free from virulence, but under altered conditions, especially the association with other microbes, the toxic power is regained. When the disease is transmitted from one animal to another of a different species the virulence is diminished, but it is again increased as it passes from one animal to another of the same species. Thus suppose that from a mouse A^1 suffering with plague we inoculate a guinea pig B^1, it will require an over-proportionately larger dose to kill B^1 than was necessary to kill A^1 in the same time. But if from B^1 we inoculate guinea pig B^2, and from B^2 we inoculate B^3, then death will take place more rapidly in B^3 than in B^2, and in B^2 than B^1. Further if from B^3 we inoculate mouse A^2, death will not take place so rapidly as if it had been inoculated from the original A^1. This phenomenon cannot be regarded as an absolute rule but it is of such frequent occurence as to indicate that the bacillus is very much modified by its host. Decaying organic matter is the best nidus for the growth of the bacillus, unless the micro-organisms of decomposition be present in such quantities as to smother the aerobic plague bacillus.

THE PORT OF ENTRANCE.—The human subject is most frequently infected through the skin, the mucus membrane of the nose, or the conjunctiva. So far as the skin is concerned some slight abrasion or solution of continuity probably is necessary before the micro-organism can effect an entrance. The mucus of the nose is a first-class culture medium for the bacillus, and the ordinary use of the handkerchief or removal of a hair from the nostril may cause sufficient abrasion to permit inoculation. From this focus the disease may extend through the air passages and produce pneumonia. The ocular mucous membrane and conjunctiva are always subject to insignificant injuries, and attendants have been infected through them by patients, suffering from the pneumonic variety, coughing particles of sputum in their faces. It is extremely doubtful whether infection can take place through the lower alimentary system, because the gastric juice in the stomach, and the great number of bacteria in the intestines are decidely inimical to the bacillus pestis. Animals, which apparently were infected through the stomach, may have been inoculated in the mouth or snout when eating the contaminated food. No conclusive evidence of this mode of infection has been reported. It is important for medical attendants to remember the channels through which the bacillus enters the body and the methods by which it can be destroyed, as they show how, by trivial precautions, the danger of infection from the patient may be reduced to a minimum. The danger of transmission from man to man is very slight if proper precautions are taken. To understand this we must remember that the bacillus is not found on the surface of the body unless the latter has been contaminated by pus, sputum or discharges. The sputum probably is the source of greatest danger, as small particles are not so easily detected on the clothing of patients or may become mingled with dust in the sickroom, and yet it is very rich in bacilli. The pus also contains bacilli unless, as has already been mentioned, they have been destroyed by the excessive amount of other micro-organisms. The fecal and urinary discharges are not of so much importance as they are only infected from hemorrhages, and the blood itself, except in septicemic cases, does not usually contain bacilli before the fourth or fifth day. There is no evidence that the contagion exists in the exhalations surrounding a patient, and when other people in the same house are infected by one already plague stricken, it is probably by coming in contact with articles that have been contaminated and have not been disinfected, or by inhaling dust containing particles of the dried sputum or pus. It is thus evident that if the attendants observe strictly the ordinary rules of cleanliness for the patient and themselves the risk of infection is not great. There can be no doubt that rats play a very important part in spreading the disease. Their habits of living on refuse and waste material, and of attacking ship cargoes particularly expose them to the disease; when these animals sicken they are covered by fleas which leave the dead body so soon as it cools, and then, by transferring their attentions to members of the human species, men become inoculated through their agency. As rats frequently eat their dead comrades, the mouth and nose become infected and thus the disease spreads among them. Flies also spread the disease, and at present there is considerable discussion as to the particular varieties of both fleas and flies which are engaged in this pastime.

The post mortem appearance in a case of plague are those of engorgement and hemorrhage, no organ being exempt. As already mentioned the bubo generally consists of glands matted together, and even when distinct buboes are absent, as in the pneumonic and septicemic forms, nearly all lymphatic glands are slightly enlarged and present varying degrees of engorgement. The heart, liver, kidneys and spleen are very prone to parenchymatous degeneration, and the lungs may not only show engorgement but distinct pneumonic patches. The bacilli are found not only in the buboes and various organs, but also in the blood, the peritoneal, pleural and cerebral fluids; autopsies therefore must be made with the greatest care as the disease may be spread by the escape of these fluids.

TREATMENT.—The medicinal treatment of plague consists in the free use of stimulants, administered in the hope of sustaining the patient until the disease has run its course. Formerly if ten per cent of the people attacked recovered, the results were regarded as excellent, and it was therefore with delight that the serum treatment, which promised so much, was received. Yersin's serum is made by inoculating the horse with a culture of plague bacillus, and repeating the inoculations in larger doses and at long intervals until a serum of sufficient antitoxic power is obtained. The great value of this agent both for curative and protective purposes has been well demonstrated, the latest returns showing that the mortality in plague patients treated by this method has been reduced to forty per cent. The prophylactic influence of the serum is of very short duration, not lasting for more than three or four weeks. This is to be expected because an attack of the plague does not produce permanent immunity from future attacks. The preventive inoculations should consist of 10cc injected subcutaneously and repeated every ten days during the period of exposure; the curative treatment should consist of an intravenous injection of 20cc followed by a subcutaneous injection of 40cc twenty-four hours later. Hafkine's lymph is prepared by destroying the bacilli in a plague culture by means of heat, and injecting this into the person who desires to obtain protection. It produces a mild attack of plague which gives protection for at least six months, and the immunity is increased by a second injection ten days after the first. It is very evident that this can be used only for phophylactic purposes, and that if administered to one already suffering from plague, or in whom the disease was incubating, it would seriously aggravate the conditions. The dose for an adult is 5cc, but that made in and supplied from the laboratory of the United States Marine Hospital Service should only be administered in doses of 1cc. Therefore Yersin serum should be used for curative purposes, or for the protection of people who have been already exposed to the disease and may be incubating it, Hafkine lymph may be used for protective purposes only, and the administration restricted to those who have not been recently exposed to the disease, and who are not liable to be exposed until they shall have completely recovered from the primary effects of the inoculation.

TWO CASES OF MYOTONIA OR THOMSENS' DISEASE OCCURRING IN THE SAME FAMILY.

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Read Before the California Northern District Medical Society.

Myotonia Congenita, or, as it is better known, "Thomsens' Disease," is of peculiar interest on account of its rarity. White, of Guy's Hospital considers it the rarest disease in medicine. The chief points in the diagnosis of this disease are:

1. The tendency of the muscles to tonic spasm during attempts at voluntary movements following period of rest, gradually disappearing and remaining absent as long as exertion is continued.
2. Mechanical and electrical reaction. Called by Erb "Myotonic Reaction."
3. Hypertrophy of muscles.

Erb in describing these cases noticed that if the affected muscles were struck with a percussion hammer a tonic spasm of the muscle fibers took place, lasting from five to thirty seconds. He also observed that upon application of the galvanic current, wave-like contractions of muscles followed, passing from cathode to anode, resembling waves produced by dropping a stone in water.

The present article is based upon observations made upon two cases in the same family.

Case I. W. M., male, 25 years of age; born in California; parents English; occupation, miner. Parents both living and in good health, four sisters and three brothers, all healthy with exception of one brother described in Case II. Patient himself has always enjoyed good health. Has congenital inguinal hernia. Was never able to participate in games with schoolmates on account of awkwardness in moving, and stiffness of muscles. Parents always thought hernia the cause of this awkwardness. Patient is of

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medium height, showing well developed muscles. These muscles much weaker than their appearance would lead one to suspect. He complains of difficulty in walking after remaining inactive. Having walked a short distance, the difficulty gradually passes away. Should foot meet with an obstruction, he is very apt to fall, and upon falling finds difficulty in arising. At times it takes about one minute to assume erect position. Finds difficulty in going upstairs, especially first few steps. Should stairs be long, difficulty gradually passes away. When hand is clenched he cannot open it quickly, and when opened a few fingers remain partially bent for some time. He is very stiff upon arising in the morning, but at no time does he complain of pain in the muscles affected. The trouble lies mainly in the muscles of the arms and legs. With the exception of the stiffness in the muscles no symptoms of any organic or nervous trouble are present. Reflexes normal; knee jerk fairly well marked.

Myotonic Reaction.—Muscles of extremities, especially biceps show marked furrows lasting several seconds upon striking with percussion hammer. Upon application of a strong galvanic current for some time wave-like contractions are noticed.

This myotonic disorder of movement is not sufficient to prevent patient from carrying on the duties of a miner, but is sufficient to cause him to lose all confidence in his arms and legs after periods of rest.

Case II. E. M., male, age 21; brother of W. M., case I. Muscles very well developed; occupation, miner. First noticed trouble when about ten years old, following an attack of *la grippe*. Chief difficulty lies in raising and maintaining hands at level of face. After many attempts difficulty passes away. It is impossible to cross the knees until after many attempts. After having performed either of these acts successfully, he finds no difficulty in repeating them if an attempt is made immediately. Has no difficulty in walking, unless ground is uneven. The electrical reaction in this case is not as positive as in case I. The other symptoms are similar.

Heredity in this disease plays a most important part. Thomsen, after whom the disease is named, was able to trace the disease through four generations of his family. In cases given above, although the family history is negative regarding ancestry, we have the same trouble occurring in two members of the same family Fright, by some writers, has been given as a cause in few cases.

This stiffness or spasm occurs in any, or many, of the groups of muscles used in voluntary movements. No case has been recorded in which this tonic spasm occurred in muscles taking part in respiration, swallowing, micturition or defecation.

The two principal theories given as causes of this disease are the myopathic and neuropathic. Microscopic examinations made upon sections of muscles removed during life have revealed an excessive hypertrophy of muscular fiber with altered appearance of minute structures.

Jacoby also noticed distinct division of fibers into angular fields resembling Cohnheim's fields. Later, in an article written in 1898, Jacoby considers this excessive hypertrophy of muscle fiber, found upon miroscopic examination to be due to the mechanical irritation caused upon removal of the section, and as simply corroborating the clinical fact of their hypercontractility.

The only autopsy recorded is one performed by Dejerine and Sottas, upon a patient who had died of acute nephritis. Nothing abnormal was found in the spinal cord or periperal nerves. On account of the serious infiltration of muscular tissues the evidence found in the muscle fibers was not positive.

Many cases of myotonia have been recorded developing after an acute infection. Jacoby describes a case following typhoid.

In case II the trouble was not noticed until the patient had suffered from la grippe. It seems probable that in this case the affection was lying dormant until awakened by an acute process, as a tendency toward the affection is proven by its occurrence in the congenital form in another member of the same family.

The treatment in myotonia has been without result. Patients learn to avoid those things which increase the trouble, as cold, long inactivity, etc.

GLOMERULAR NEPHRITIS, WITH MEMBRANOUS VULVITIS—POST-MORTEM FINDINGS.

By Elizabeth E. Keys, M. D., Assistant to the Children's Clinic Cooper Medical College.

Read Before Medico-Chirurgical Society, June, 1900.

Patient came to clinic April 16, 1900. Female—7 years of age, native of Ohio, Austro-Hungarian parentage.

Family history: Both parents living and well. Two other children living and well. One other child has had repeated attacks of acute rheumatism. Five children dead, one tuberculosis, one dropsy, one of diphtheria, two in infancy. One maternal aunt died of tuberculosis.

Previous history was taken according to the history and blanks of the children's clinic. Birth was natural and at full time; first tooth at eight months; walked at 14 months. Was nursed at breast till 15 months of age. Has had measles and diphtheria, but no other illness.

Present Illness.—Child has been ill for about 2½ weeks. The onset was with sudden vomiting, explosive in character, and excited by everything taken into the stomach. A physician was called and attended her for a few days, but as she seemed no better he was dismissed. Since then she has been confined to bed; seems rather dull mentally and takes no interest in her surroundings. In addition to vomiting, the child complains of almost constant headache, fleeting pains, and for the past two days soreness of the vulva. On examination the mother says she found a little blood on the clothing. The mother thinks the urine is decreased but is not very definite in the matter. The appetite is good, and the child seems hungry. Sleep is restless, occasionally screams; the bowels are irregular, for the last two days constipated. The diet is that of the family. The mother says that she eats a great deal of fruit and thinks an orange seed may have caused some bowel trouble.

Physical Examination.—Child lies as though exhausted and relaxed—drowsy and rather stupid. Large, well developed and well nourished. Face flushed and somewhat puffy looking. Pupillary reflexes normal. Tongue, thick yellow coating; breath—very foul. Tonsils slightly enlarged, pharynx normal. Thoracic movements normal. Apex beat in 5th interspace, just outside mammary line. Abdomen slightly distended and tense, no sensitive points. No skin hyperesthesia. Spine slightly hyperesthetic but no tender points; no opisthotonus. Inguinal glands on both sides enlarged. Lungs clear on percussion and ausculation. Area of cardiac dullness enlarged to left apex just beyond nipple line; sounds clear. Vulvo-vaginal tract:—both labia majora swollen, red, and covered with a thick yellow, bloody very foul discharge. Perineum covered with discharge, and the rectum swollen and red. Some blood on the napkin. The examination of the whole tract necessarily superficial on account of the pain caused by any attempt to touch the parts. No swelling of the ankles. Pulse, 90-small. Respiration, while sleeping 11, irregular. Temperature—thermometer would not register.

TREATMENT.—Instructed to put the child to bed and keep on an exclusive milk diet. Calomel grs 1½ in 1-10 every half hour. Boracic acid douche three times a day.

APRIL 17.—Reported that the calomel caused repeated movements of the bowels. Vomited everything taken yesterday, even the calomel when given with water; retained when taken dry. The douche gave relief and the child asked to have it repeated. No urine passed and none when the bowels moved so far as could be ascertained. Prescribed a hot bath for 20 minutes to be followed by hot pack and hot fomentations to kidneys for two hours. Instructed to have water regularly unless the stomach absolutely rejected it. At 4.30 p. m. the child looked much better. The puffiness of the face had disappeared. She had retained all her milk but could be persuaded with difficulty to take water. The mother showed me quite a quantity, about 2 ounces of mucus plentifully streaked with blood, vomited this afternoon. This was the first blood vomited. The vulvo-vaginal tract better; the discharge free but not so foul; bowels moving rather freely and the bleeding can now be located at the rectum. The douche affords so much relief that it is ordered every two hours. Temperature normal; respirations and color good; about 1½ ounces bloody urine evacuated, and instructions were given to add any she might void during the night and send to the clinic to-morrow morning.

APRIL 18.—Urine was not sent to the clinic. The child felt much better; has vomited milk once, and once a small quantity of blood streaked mucus. Complains still of some headache. The bowels are still moving rather freely and the mother showed me two pieces of what appeared to be mucous membrane passed with one stool; still bleeds a little from the rectum. The child screams on slightest touch to vulva. The labia are swollen and transparent looking and a bleeding fissue across the margin of left labium. The vulva does not look as well as yesterday. Pulse feeble but not worse than at first examination. Hot bath and hot pack repeated, but very difficult to induce sweating. The mother was warned as to the onset of convulsions and instructed to call for help at once, should such occur. On consultation with Dr. F. P. Gray it was decided to examine the vulva under chloroform to-morrow.

APRIL 19. Urgent call at 6.30 a. m. The child was found in convulsions and collapse. The mother reported that the convulsions began about 3 a. m. and were general, but when I reached the house they were limited to the right side of the face and right arm. The heart impulse was not definable—merely a tremor in the cardiac region. Cardiac stimulants were administered hypodermatically, and a few whiffs of chloroform relieved the convulsions. A large quantity of bloody mucus was vomited with a few white curds. As soon as possible the child was placed in a hot bath and in about an hour consciousness returned and some slight perspiration was induced. This was followed by a hot pack and 1-16 gr. of pilocarpin was administered hypodermatically. About one hour later urine sufficient to saturate a small napkin was passed; the pulse became fairly strong, rate 120 and it was decided to chloroform for the vulvar examination. This examination showed the conditions as follows: a thick, white, clearly defined membrane limited to the inner surface of the labia majora. The minora, urethra, clitoris and vagina were absolutely free and the mucous membrane normal in color; the perineum red and excoriated; rectum swollen, everted, bleeding slightly. The parts were thoroughly irrigated, first with lysol, then with potassium permanganate, well dusted with aristol and dressed with gauze. Morphin grs. 1-16 administered and the child remained quiet for several hours, very little perspiration being induced, however, and no further urination. Called at 3.45 p. m. and found the patient rapidly sinking—delirious,—no radial pulse, heart rate 30 per minute.

Dr. Ophüls made a post mortem examination with the following findings: On inner side of both lobia majora, and on the sides of the anus there are membranes loosely attached to the surface. After removal the surface is slightly granular, grayish white in color and hyperdemic—shows the corium: Liver projects about one finger's breadth below the border of the ribs. Pericardium contains milky fluid fibrinous flakes. Heart large, both ventricles show moderate dilatation and perhaps a little hypertrophy. Lungs, post mortem changes. Spleen slightly enlarged, hard, pulp contains much blood. Kidney—normal in size—capsule easily removable, surface pale, greyish red. On cut surface cortex is anemic. In the anemic tissue a number of hyperemic markings distinct—no clouding. Bladder contains a little slightly turbid urine, a few just visible hemorrhages in the mucous membrane. Stomach contains some clear mucus with a few particles of partially digested food. The mucus forms a thick coating on the surface of the mucous membrane, which is thick and swollen. Colon. Mucous menbrane covered with a thick layer of mucus, which especially in sigmoid contains a little blood. The membrane is pale, swollen and cloudy. The same coating swelling and cloudiness is found in upper part of ileum and jejunum. Brain and meninges show slight edema and general hyperemia. Gross Diagnosis.—Cardiac dilation and insufficiency. Gastro enteritis. Diphtheria of labia majora and perineum. Microscopical examination of the various tissues showed nothing abnormal with the exception of the kidneys. Here was found a glomerular inflammation,—a lymphocytic infiltration in spots, the spaces between Bowman's capsule and the glomerular tuft being filled with a large number of spindle shaped cells. Many convoluted tubules are distended and filled with homogenious material and a few contain red blood corpuscles. In a few spots the epithelium is filled with glistening granules. Cultures made from various parts showed in spleen a few pneumococci and colon bacilli. Pericardium—Colon bacilli. Vulva—Löffler's blood serum culture showed cocci and bacilli, but no diphtheria bacilli.

The onset was probably an acute gastro-intestinal inflammation, and that it was very severe would seem to be evidenced by finding colon bacilli invasion so far away as the pericardium. Clinically, however, it is difficult to decide absolutely that the general symptoms complained of,—headache, vomiting, irregularity of the bowels and dulled mentally were not the gastro-intestinal symptoms of a uremic intoxication. We have been unable to find much in literature regarding the etiology of gomerular nephritis. The few writers who mention it at all invariably speak of scarlatina as the cause of this form. Anders speaks of a few cases of scarlatinal origin in which the pathological process was limited to the glomeruli, and Dr. Dickinson of England says that "in certian cases of diffuse nephritis, particularly of scarlatinal origin, the malphigian bodies are especially involved to the extreme diminution of the urine, and the name glomerular nephritis is applied to the condition. This is characterized by uremia rather than dropsy." We have no evidence and can obtain no history of scarlet fever at the onset of this illness, so the natural assumption is that the nephritis was due to vulvar infection. However, would a septicemia sufficiently virulent to cause death from a secondary nephritis in 5 days not have other marked symptoms? There was no rise of temperature at any time. Possibly the slight oozing of blood from the rectum may have been sufficient to control this, but there were no active nervous symptoms. The child seemed sleeply and stupid, but always answered all questions intelligently—nothing approaching coma was ever noticed. The only active excitation was the perod of acute antimortem delirium. To be sure, the condition of the heart was at no time good, and this is about the only clinical evidence we have of a severe bacterial intoxication. It would seem that to obtain such a rapid, marked effect upon the kidneys, these organs must have been rendered peculiarly susceptible by the preceding gastro-enteritis or possibly the inflammatory process was begun there. I have been able to find but one or two writers who mention any connection between gastro-enteritis and nephritis. Dieulafoy and Jacobi each mention a case in which the kidney was incapacitated by alimentary ptomaines.

PATHOLOGY.—Some observers, among them Delafield, consider that the glomerular inflammation is merely a step toward the involvement of the entire kidney parenchyma, maintaining that as the floating poison strikes the glomeruli first, the primary affection takes place in them and descends from them into the tubules. Other students incline to the opinion that the inflammation may remain limited to the glomeruli and then form another division of kidney disease. The normal glomerulus is composed of a tuft of blood vessels inclosed in a capsule lined a layer of flat cells. The vessel walls are lined with cuboidal cells and the outer surfaces are covered with large flat cells. In the pathological condition the most marked change is in these outer cells which are swollen until they become almost cuboidal and are increased in number as well. The blood vessels themselves may be filled with white blood cells. As a result of these changes the tufts are swollen, the capsule distended, the blood vessels matted together and the glomerular circulation greatly impeded.

URINE.—In being unable to report on the chemical and microscopal constituents of the urine, a point of great interest is left untouched. The accummulation of the 3 days amounted to less than 3 ounces and was at all times so heavily loaded with blood from the external parts as to be useless for examination. That there was no considerable hemorrhage from the kidney is shown by the appearance of the small quantity found in the bladder at autopsy. Literature gives little information of the condition of the urine in glomeular nephritis.

Some writers say that the albumen may be very small in amount, and one asserts that casts may be entirely absent. Some slides prepared by Dr. Brady may be of interest. They show very clearly the thickening of the capsule by proliferation of spindle shaped cells, the thickening being rather cresentric and limited to the side from which the different vessels spring. The lymphocytic infiltration and hyaline deposits in the tubules are also closely demonstrated, as well as the broken down glomerules.

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THE TREATMENT OF PNEUMONIA.

By Edward N. Ewer, M. D., Oakland, Cal.

Read before the Alameda County Medical Society May 10, 1900.

The mortality in croupous pneumonia for all ages, computed from the statistics of over 350,000 cases is 21.7 per cent in this country and England. I think I am safe in saying that it has not been proved that any particular system of treatment has reduced this mortality. Claims of a lower rate have been made by the originators of different methods, but others have not been able to verify their results. Where the showing has been much better than 80 per cent of the recoveries, the age factor may have had something to do with it; there being perhaps a preponderance of patients under 20 years of age, in which class the usual rate of fatal cases is only 5 to 10 per cent. It has also been observed that the mortality differs very greatly in individual epidemics. That there is no wide spread confidence in any particular line of treatment is shown by the unanimity with which recent writers recommend a purely expectant course in dealing with this disease. Dunglison defines expectation in medicine as that procedure which consists in noting the progress of the disease, and removing deranging influences, without prescribing active medicines unless such shall be imperiously required. It may be of most profit then, to examine into the methods most in vogue for removing these deranging influences, without spending much time on so called specific treatments.

We are told that before 1845 the main reliance in treatment was blood letting, and while it does not appear that it was considered a specific, still the writings of most of the representative men of that time, indicate that they were firm in the belief that no severe case of croupous pneumonia could possibly get well without resort to bleeding at frequent intervals and in enormous amount. Later, venesection occupied a place among other therapeutic measures for the relief of certain symptoms, and it still has limited sanction under very definite conditions. These conditions may or may not occur during the stage of hyperemia that is during the first 48 to 72 hours. If the patient is an adult, robust, otherwise healthy, and with a hard bounding or tense pulse, flushed face, rapid and noisy respiration and bloody sputum, there is an evident indication for a circulatory sedative, and our choice may lie between aconite, veratrum viride, and venesection. It is an old dictum that the heart's energy must be conserved and strengthened for the work, which will be thrown upon it during the stage of consolidation, and it is not a long step from cardiac sedation to cardiac depression. Either aconite or veratrum viride used to the point of relieving the urgent symptoms are likely to become heart depressants. Venesection may also produce an after exhaustion if done a little too late or if an excessive amount of blood is drawn, but when intelligently used, this measure will more surely accomplish the result desired than will the drugs, and the effect upon the vital forces during the second stage will not be harmful. No fixed amount of blood should be decided upon beforehand. The finger should be kept upon the pulse and its volume and quality carefully noted. When it becomes soft and compressible, and the breathing easy and full, the bleeding should be arrested, whether the quantity obtained is 6 or 16 ounces. Rarely more than 20 ounces will be necessary to bring about the improved condition. While bleeding may be theoretically indicated during the later stages of pneumonia, it has been found of no value practically, and there is not even theory to support the use of aconite beyond the first stage.

ABORTION OF PNEUMONIA.—Some observers believe that in certain cases, pneumonia can be aborted if vigorous treatment is instituted sufficiently early; of course before consolidation has begun. It is difficult to understand how the measures recommended for this purpose act, in view of the fact that it is pretty definitely settled that pneumonia is an infectious disease depending upon the presence in the system of a specific toxin. Those who think the disease can be aborted, recommend an eliminative treatment and possibly during the period of invasion, before the system has become overwhelmed by the pneumotoxin, enough of it can be eliminated to restore the balance of power to those bodily forces, whatever they are, which resist the invasion of disease germs and their poisons. Danforth of Chicago advises that the patient be put to bed in a well ventilated room with a temperature not above 65 degrees F. The air should be moistened by steam. A smart saline cathartic should be given and renal elimination aided by potassium citrate or spirit of mindererus. If the indications for blood-letting are present it should be promptly done, after which a 5 grain Dover's powder may be administered, and a hot cataplasm applied to the affected side. He states that this treatment is more than likely to be followed by a prompt arrest of the threatening symptoms. Others believe they abort the disease by the free use of diaphortics, combined, of course, with renal and intestinal eliminatives. They advocate pilocarpin or any therapeutic measure which will quickly sweat the patient. Dr. Stratton of Oakland has kindly shown me notes of several cases representing the typical symptoms of beginning engorgement in which this method was successfull in arresting the disease.

THE FEVER.—There is a tendency now not to interfere with a temperature which is said to be normal to a disease. The pneumococcus and many other germs are not especially active at a temperature of 104° or more and yet practical clinicians are not convinced that such a temperature is desirable. It may be that the high temperature has something to do with the formation of an antitoxin to antidote the invading toxin in the infectious disease, or it may exert some inhibiting influence upon the growth of the specific germ, but I have a suspicion that the present tendency to disregard fever is due in part to the fact that the newer antipyretics have caused more harm than good by their depressing action upon the circulatory apparatus. The effect of the Brand bath in typhoid and pneumonia is proof enough for me that an antipyretic which does not weaken the heart, and does assist in increasing the elimination of toxin is a good thing in most fevers. We are, I am sure, much easier in mind if we can keep the temperature at a low figure, even in a disease like pneumonia which does not last long. Antipyretics, such as acetanilid and antipyrine, should not be used systematically because of their well known debilitating effect. They are really useless so far as the fever is concerned, but an occasional dose, early in the disease, may be given for headache or to procure sleep; there are pure hypnotics, however, which are better for the latter purpose and chloralamid is one of the most efficient of them. Cold bathing and sponging do not lower cardiac power and there is no more reason why they should not be more used in pneumonia than in typhoid. It is generally admitted that if there is no reaction after the cold bath in typhoid it better not be repeated. It is the reaction from the nervous shock that increases the tone of the cardio-vascular apparatus. Dr. Frank Billings says that this reaction from the nervous shock means increased blood pressure and consequent improved secretions and excretions. This is exactly what is desired to be accomplished in the consolidation stage of pneumonia and if at the same time there is a lowering of temperature there need be no feeling of alarm over a possible increase of activity among the germs. A method of securing the benefit of cold with a minimum of discomfort to the patient has recently been proposed for the typhoid fever by Dr. Booth of Youngstown, Ohio. It can be applied to pneumonia as well. The patient is placed upon a bed protected with a rubber sheet and then the trunk and limbs are covered only by a layer of gauze. The gauze is kept saturated with water at the temperature of the body and evaporation with consequent cooling if the surface is favored by raising the temperature of the room to 80° or 85° F. This is said to be an efficient antipyretic measure. The gauze can be wet by squeezing water from a sponge upon it as often as necessary to provide moisture for evaporation. If the atmospheric humidity is high evaporation will not take place, of course, the measure would be useless. This furnishes the indication for heating up the room.

POULTICES.—The days of poultices in pneumonia are numbered. They are oppressive to the patient and a source of great fatigue and exhaustion when changed every few hours. They also interfere with heat dissipation. They do relieve the pleuritic pains to some extent but no more than small mustard plasters or minute doses of Dover's powder. The cotton jacket while not quite so uncomfortable is open to the same objection as the poultice. The cough is often a distressing symptom. Expectorant mixtures do not relieve it nor do they hasten resolution. Ammonium carbonate has been much used as a stimulating expectorant. As a stimulant it is much inferior to others at our disposal, as an expectorant it probably has no influence on a consolidated lung, it also is prone to disturb digestion. Small doses of Dover's powder or 1-12 grain dose of heroin every 4 or 5 hours are quite efficient in relieving the cough. During the second stage and at the time of crisis we well know that the chief danger lies in the liability of the heart to fail. A frequent small, short or weak pulse with dry tongue, restlessness or delirium furnish the indication for the use of a stimulant and its proper selection is a matter of great importance. Nitro-glycerine has been recommended strongly, but I believe it to be a dangerous drug for in the slightest overdose instead of a stimulant it becomes a decided depressant. I am sure I have seen it cause disaster in another disease by that very action when

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stimulation was desired. Strychnin, caffein, cocain, atropin, alcohol, are the stimulants to select from and digitalis is often of use. The first four raise temperature according to Osborne of Yale by increasing muscular and cerebral activity and atropin also by reducing heat—loss by preventing perspiration. Alcohol reduces temperature by relaxing the blood-vessels and increasing perspiration. If the heart fails and the temperature is not high strychnin and digitalis should be given. It may be necessary to give the strychnin in large doses, 1-24 to 1-14 of a grain every 4 hours, in which case it should be given hypodermatically to insure rapid absorption. Cocain is useful but, if it produces cerebral excitement, it must give place to strychnin. Circulatory failure with high fever or if accompanied by palor, irregular respirations, or intermittent pulse, calls for the use of alcohol. It is undoubtedly wrong to give it in all cases. It is wrong to give it in every case in which stimulation is indicated. It does not take the place of strychnin, digitalis, or atropin. A study of its physiological action gives us very definite information as to when it should be of value in the therapy of pneumonia, and clinical experience has shown that it is of value when thus intelligently and carefully used. In the pneumonia of inebriates alcohol is imperatively demanded in large quantities from the very first. If the heart fails decidedly, conjestion and edema of the other lung are likely to occur. As a respiratory stimulant, atropin is perhaps better than strychnin and it is especially useful at the time of crisis if an exhausting perspiration occurs. Heroin is a respiratory stimulant and if it is being used for the cough it may fulfill the first indication as well. Oxygen should not be forgotten if the embarrassed respiration calls for its use. During the stage of consolidation nourishment should receive proper attention. Milk, eggs, broths, strong beef tea and peptonized foods must be given with careful regularity. Of course, the bowels should be kept open and it has been said that pneumonia is not hopeless as long as the kidneys act well. Opium is a remedy that should be used very sparingly at any time during pneumonia and especially as crisis approaches for its paralyzing action upon the respiratory center may as Prof. Gairdner says destroy the balance between life and death at this critical period. After the crisis and during the stage of resolution, the patient must be kept quiet and free from excitement, for anything that irritates or excites the brain may interfere with heat regulation and cause the return of fever. I have yet to mention two so called specific treatments namely the digitalis treatment proposed by Petresco of Bucharest, and the serum treatment. Petresco advocated enormous doses of digitalis, as much as two drams of the powdered leaves equal to two ounces of our tincture during the 24 hours. He reports very low mortality in over a thousand cases. This plan of treatment has not been received with much confidence but those who report cases have generally very good results. The serum method of Klemperer Brothers of Berlin, consisted in the administration of blood serum from convalescent patients and from animals previously rendered immune by the injections of filtered bouillon cultures of the diplococcus pneumonial. This immunity lasting about six months was readily obtained in animals. When the disease was experimentally produced in animals, they succeeded in bringing about crises within 24 hours by the use of serum from the immuned animals. They did not succeed, however, in establishing serum therapy upon a practical basis for the treatment of the disease in man. Panes' serum is the most recent one to attract attention. Eyre and Washburne of England have done some work with it and have been successful in curing the experimentally produced disease in animals. Fanoni of New York reports six cases treated in man with recoveries. His results do not seem to be in any way remarkable. In two of his cases resolution occurred on the sixth day by lysis, in two on seventh day, one by crisis and one lysis, in one case on the eighth day by lysis and one on the tenth day by lysis. From these few cases he is so convinced of the efficacy of the serum that he says it is the duty of the physician to use this serum and that he is culpable if he allows his patient to die without it. An opinion with which few will agree at present. The research already done gives promise of an effective serum remedy in the future.

SOME EXPERIENCES OF A VOLUNTEER SURGEON IN THE U. S. ARMY.

By W. J. Hanna, M. D., Sacramento, Cal.,
Late Captain and Assistant Surgeon California Heavy Artillery, U. S. V.

Read before the California Northern District Medical Society.

In the belief that the general practitioner in private life has an erroneous impression of the duties of an Army Surgeon, I desire to present to this society some of my experiences while in the service of the U. S. Army.

The first lesson to be learned in the army is obedience to orders and in fact one's entire experience is a succession of orders. In our recent war with Spain large bodies of men were massed at various points and their care and attention devolved upon volunteer medical officers, who as a rule were entirely unacquainted with army regulations. This being the case it was almost impossible to obtain suitable supplies of drugs and medicines through military channels. The various charitable organizations, such as the Red Cross Society, deserve much credit for the relief afforded the troops during the early portion of the war.

Upon entering the service as a Volunteer Surgeon I found myself attached to an independent battalion of heavy artillery composed of eight hundred men, which in numerical strength was the equal of the majority of regiments of infantry in the service. The regulations provide for but one surgeon to an independent battalion, while regiments are entitled to a major surgeon and three assistant surgeons. Supplies and equipments are regulated in the same manner. Previous to joining my command various detachments of the California Heavy Artillery had been ordered to the Philippines so that accompanying the last of the expeditionery forces there were but fifty men, including the commanding officer and his staff.

Our trip from San Francisco to Manila was very pleasant, the chief duties of the medical officers were to look after the sanitary condition of the ship, inspect the food supplies and to take care of the general health of the men. A pleasant stop of four days was made at Honolulu where the men were given shore leave. Nothing of importance occurred from there on except that during our last three days voyage in the China Sea a typhoon was encountered and nearly every one was more or less sea sick.

Upon arriving at Manila the troops were assigned to their various organizations. The command to which I was attached was ordered for duty at the old historic town of Cavite. At this place immense quantities of stores and munitions of war captured by Admiral Dewey from the Spaniards were located. In addition to my duties as battalion surgeon I was ordered to look after the sick of the Nevada Cavalry and the Wyoming Light Artillery. An eight-roomed cottage was provided by the Quartermaster for use as a battalion hospital and I was assigned to a six-room house for living quarters. My hospital corps was composed of a sergeant, who was a druggist, and five privates. These men had been connected with the army for a period of six months. When hospital corps men are assigned to a surgeon for duty, a receipt for their entire equipment has to be given, this equipment consists of a canteen, canteen strap, knife, fork, spoon, tin cup, waist belt, waist belt plate, haversack, haversack strap and a hospital corps pouch; if he be transferred to another command invoices and receipts have to be made out and the soldier is charged with any missing article. Through the timely requisitions made by my predecessor and also through my own efforts our command was well supplied with drugs and surgical instruments.

The Battalion Hospital contained four beds and was supplied with a sterilizer, ice cap and coil for the treatment of fever patients and a complete dental extracting set, this latter acquisition was continually in use for the surgeon has to do the dental work for the entire command. Cases were allowed to remain in the Battalion Hospital for a period of three days, when if their symptoms indicated a longer illness they were transferred to the general hospital. Sick call was usually held at 7:15 a. m., when all who were able presented themselves to the surgeon for treatment. Each company was furnished with a sick book and when once the first sergeant entered the name of a soldier he was not permitted to resume duty until so ordered by the surgeon.

The general health of the command was good during the two months they performed garrison duty. Shortly after the troops arrived in the tropics a great number of them were afflicted with doby or Manila itch, a disease which resembles tinea circinata or ring worm, the eruption occurring chiefly about the fork of the thighs, buttocks, groins and axillæ though it may involve the whole body. In my judgment it was contracted by actual contact with the natives and from clothing washed by the Filipinos without being boiled. Numerous cases of diarrhea and some dysentery occurred which was due to the eating of tropical fruits.

On February 7, 1899, hostilities broke out between the Insurgent and American forces and as a result the morning sick call was greatly reduced, every man who was able wanted to go to the front. First aid packages, containing antiseptic gauze, a piece of oiled silk, a triangular bandage and two safety pins, were furnished each man and no soldier was considered properly equipped unless he had one in his possession. Our first actual experience in the field occurred on the morning of the 9th. The Insurgents set fire to the town of San Roque and began a retreat into the country. Our forces were ordered to advance, accompanied by seven hospital corps men I was with the California Heavy Artillery during the day's engagement and when night came the records showed thirteen dead Filipinos and two wounded Americans. Our commander received orders to hold his position and make no further advance. Entrenchments were thrown up and four 3.2 inch guns of the Wyoming Light Artillery mounted. The Insurgents were strongly fortified 1500 yards in our advance.

During the five months which we occupied this position we were under fire 59 days; thanks to the poor marksmanship of the enemy but few of our men were wounded. A case of interest was that of a soldier sitting crosslegged at the guard house when a Mauser bullet fired by the enemy, located at a distance of from 1,500 to 2,000 yards penetrated his leg and both thighs making six perforations; under antiseptic treatment the wounds healed by first intention, and he was able to be about inside of two weeks.

During my stay at the outpost a large number of the men including the majority of the officers suffered from attacks of dengue or break-bone fever. Dysentery and bowel complaints were prevelant, but I did not discover a single case of appendicitis. At this time small-pox broke out in Cavite and six men of the Fifty-first Iowa Regiment were afflicted three of whom died. The command under my care, although similarly exposed, did not develop a single case; this I believe was due to efficient vaccination. Our orders were to vaccinate every two weeks until the entire command was successfully vaccinated.

Three weeks previous to returning home while acting in the capacity of district surgeon I had an excellent opportunity to observe the disease known as beri-beri, which in its clinical and anatomical relations resembles multiple peripheral neuritis. The epidemic occurred among the Filipino prisoners of war who were confined in dungeons which were unsanitary and whose food supply consisted chiefly of the much talked of "embalmed beef." Upon removing them from their unsanitary quarters and supplying them with proper food the mortality, which was at the rate of six per day decreased, and during my last week in the Islands, not a single death occurred, although at this time there were over two hundred suffering from the disease.

Our return trip was very pleasant, the Transport Sherman upon which we sailed carried two thousand troops. The men were quartered in three decks, which were ventilated by means of compressed air and lighted by electricity; an excellent hospital, fully equipped was in the stern of the ship. Our vessel stopped at Japan and we were given an opportunity to see that delightful country and wonderful people.

Upon arriving at San Francisco mustering out took place and I found that before I could obtain a certificate of non-indebtedness from the government I would have to render an account of every article signed for during my eleven months service; as a result I did not receive my final pay until six months after discharge.

1002 J Street.

THE TREATMENT OF PULMONARY TUBERCULOSIS.

By G. W. Fuller, M. D.

Read before the San Francisco County Medical Society.

During a period extending from 1887 to 1892, while connected with the Medical Clinic at Cooper Medical College, I had an excellent opportunity to observe the treatment and progress of a large number of patients, together with those in my private practice, during the past thirteen years who were afflicted with this trouble. I have given the subject of the treatment of pulmonary tuberculosis a careful and thorough consideration.

It has been wisely said that the difficulty of curing a disease, is always in direct proportion to the number of remedies that have been recommended in its treatment. Consumption is therefore no exception to this general rule. The number of remedies that have been set forth during the past forty or fifty years for treatment and care of this disease are very large. It is quite natural that such should be the case, as every physician, when he begins to investigate and to probe into the mysteries of tuberculosis, hopes that he will in the near future invent or discover something that his predecessors and colleagues have been unable to find, namely, " a specific " for the cure of consumption. The pathologists in their diligent and unceasing work with their microscopes have given to us in a measure the cause of this disease. Since then many of the most brilliant minds in our profession have labored faithfully and dissected pretty thoroughly the whole materia medica and other sources in the hope of finding some remedy or combination of remedies, that will combat and overcome successfully the tubercular poison.

It is impossible to enumerate or give a synopsis of their various researches in this field as our time is too limited. I shall also omit the clinical histories of some cases I should like to speak of, and come directly to the treatment of cases as we find them in every day practice.—It may be necessary to encroach a little upon the ground of my colleague Dr. Sullivan in the prevention of tuberculosis; nevertheless as preventive measures play such an important part in the treatment of this disease I trust such encroachment will be overlooked.

A case presents itself for advice.—We find on careful examination of the clinical history, objective symptoms, subjective symptoms, physical examination, microscopical examination of the sputa, etc., that the patient has without doubt pulmonary tuberculosis—what is to be done? Merely give the patient one or two or more prescriptions telling him to take the medicine every so often is not going to accomplish very much for his benefit; as scarcely any two cases will require exactly the same treatment, we would have to treat each particular case in a somewhat different manner, varying the course, as the symptoms and conditions of the particular case would best indicate. However, there is a *general* course of treatment applicable to all cases; the latter is the one I will now briefly outline.

PROPHYLACTIC TREATMENT.—In relation to the prevention after disease has once been acquired; I certainly think that many cases are reinfected after the disease is once in progress, either by auto-infection or from some other cause, perhaps in the same manner as first acquired. Furthermore, I have often been impressed with the idea, that this accounts for the relapses or return of many of the severe symptoms after a patient has been growing better and stronger for a considerable length of time. Why is such a person more likely to become reinfected? Simply because the air passages are already congested and inflamed from previous and recent attacks of coughing and in an already weakened condition furnishing an excellent soil for the propagation of the new tubercle. The poorly nourished and weakened tissue along the air passages being now too feeble to resist the new onslaught of the old enemy, the tubercle bacilli, with the result of another invasion upon the lungs. Had the same poison entered the air passages in a healthy individual or in the *same* individual *before* he had acquired the disease, the resisting power of the system might have destroyed it. Therefore, the greatest precautions should be exercised against reinfection, as I am fully convinced, that many cases would recover spontaneously were these precautions carefully observed—I think this conclusion is partially borne out by the fact, that we frequently find at post-mortem examinations and in the dissecting room many subjects, that years before had been affected with tubercular disease of the lungs, and this diseased portion had been circumscribed or walled off as it were, thus allowing the healthy lung and the healthy portion of the diseased lung to go along and perform their functions without any apparent trouble to the patient, as far as the lungs were concerned, and finally death being caused from some intercurrent disease. Austin Flint in his old work on the practice of medicine cites a large number of such cases. This fact tends to prove then, that we have always that greatest of all healers, Nature, on our side to help battle with this disease.

The patients then should be taught to properly care for all the excretions of the body, using powerful germicides for such excretions, and more especially the sputa whenever and wherever it is practicable to do so. They should avoid as much as possible being in a room while it is being swept, unless precautions are taken to prevent the dust from rising, to avoid inhaling poisonous particles that may arise in the dust; hence it would be better to have the room without carpets, or preferably rugs that may be taken out daily, aired and cleaned—such persons should avoid breathing foul vapors or air at any time laden with fine particles of dust; sudden changes of temperature; hot and crowded appartments should likewise, be avoided as much as possible.

SPRAYS FOR THE NOSE AND THROAT.—I have my patients use some good antiseptic spray or douche for the nose and throat, such as Dobell's solution, zymocide, pasteurine, etc.—in one atomizer and a mixture containing camphor, menthol and glymol, or one containing iodine, iodide of potassium, iodide of zinc and glymol in a glymol atomizer. Of course, there are many varieties of these antiseptic sprays and germicides now manufactured, so that the physician has a large number to select from, and may employ any which he has found most serviceable.

The atomizers manufactured nowadays are so convenient and so easily used, that patients with a few instructions can manipulate them with much benefit. They enable the patients to get the antiseptic solutions over every portion of the mucous membrane lining the nose and throat. By pursuing this course thoroughly several times daily, according as the case demands, the liability to re-infection is thereby much lessened. By keeping the upper air passages open and clean, it allows the fresh air to pass into the lungs. The fine antiseptic spray used in the *glymol* atomizer, if taken properly during the act of full inspiration will reach many and possibly all the lining membranes of the bronchial tubes—so much therefore, as a prevention after the disease is once established in the lungs.

CONSUMPTION is probably the most destructive enemy known to the human race; more especially is it to be regretted, that it cuts short the lives of so many of our fellow beings in the prime of life. This enemy has several strong powers behind the throne. It is to these powers we should call our attention and to combat each one of them separately. One of these powers seems to take a special delight in destroying its victim by *starvation*—We should see to it, then that the victim is *well* fed in spite of this particular power. Hence the proper feeding of the person attacked by this dreadful malady should attract one of our first considerations.

FOOD.—A large majority of the patients suffering with phthisis pulmonalis will tell you they have a poor appetite; many will say that even the sight of food is disgusting to them. To such patients it is not enough to say, "You should take a nutritious diet,—we must select some particular kind or kinds of food at the beginning of the treatment and even specify a *certain* amount of *each* kind to be taken at particular intervals. Usually the patients will then take it, just as a sick man takes medicine. Be very careful to not specify too large a quantity in the commencement of the treatment, in order that you can get them to carry out each instruction to the letter; if they break one rule it is easy to break all and you eventually lose control of them. While it is true you will not be able to get *all* patients to eat, still a large number of them will, and it is often surprising how rapidly the appetite will improve after they get to eating a *little.* It would often seem that the ingestion of food itself, after a short time will stimulate the appetite. I frequently order some of the digestive powders to be taken at certain intervals—but such and such a kind and amount of food must be taken at the same time, or the medicine will not work so well. Then again I order a liquid, such as liquor potassii arsenitis with liquor pepsini to be taken at certain intervals, but it must *always* be *preceded* by a certain specified amount of solid food. While these medicines are not given entirely for their medicinal qualities, still, in small doses they are serviceable, and at the same time the patient thinks they will not work so well unless food is in the stomach. The patient takes the allotted amount and frequently grows stronger. He thinks it is the medicine that has done the whole work. We do not care what *he* thinks so long as he improves under the treatment.

Consumption is a wasting disease and we must supply the system with nourishment, or the patient will live but a short time—consequently we must resort to any and all reasonable measures within our power to accomplish this end.

It is impossible to say just what kind or variety of food or in what quantities you will advise, until you have had the case under observation—find out if possible, the idiosyncrasies of each patient, what articles of food they relished most, when they were well, etc. It will often furnish a clue to begin with. An error that consumptives frequently make, is to take too much liquids into the stomach at the same time that solid food is eaten with the result of severe attacks of indigestion. As far as practicable have them take a meal composed entirely of liquids or of solids.

BATHING.—This is one of the essential features to be looked after in the treatment of this disease, as the function of the skin must be carefully preserved. I like the *morning* bath first, begin with warm or tepid water and gradually increase to a lower temperature, according to the patient's strength, until it can be taken cold.

I do not believe in the patient getting into a bath tub of cold water, but rather a sponge bath, a little salt being added to the water.—The lower extremity is first bathed and then briskly rubbed until the skin takes on a fresh glow and is thoroughly dry—put on the lower garments, then the upper extremity is treated in like manner, by the time the patient is fully dressed, he feels fresh and ready for his breakfast; no matter how little it be, he must take *something* to eat immediately, for this is the beginning of a good habit.—At night a light sponge bath of tepid water containing equal parts of alcohol is often refreshing. It is surprising how the skin will come to the relief of the lungs, if properly cared for. The sleep then will usually be more refreshing. I know of *nothing* that will prevent any one from frequently "catching cold," as the morning bath of cold salt water, as it prepares the skin and enables it to withstand the sudden currents of cold atmosphere that are necessary to encounter, if we go out into the open air—as the patient grows stronger I advise swimming (in salt water if possible). The patient should stay in the water but a brief period—they not only get the benefit of the water for the skin and general circulation, but it also affords one of the best methods of expanding the chest, and causing a healthful exercise.

EXERCISE.—This part of the treatment is of most vital importance. Patients suffering with tuberculosis usually feel *so* weak that they do not feel like exercising themselves.

They should begin with light dumbbells and short walks; exercising very moderately at first and gradually increasing the amount, according as the strength will permit—gentle massage is also a valuable adjunct when it is possible to have it.

Now we come to the most essential part in my estimation, of the whole treatment of pulmonary consumption. It may properly come under this heading and is commonly known as *breathing exercises.* Here again we are called upon to attack the other great power of the enemy, namely, its strangulation power. The disease endeavors to shut off our wind by making us take very short and shallow inspirations. You all have observed the short, quick and shallow breathing on inspiration, and the prolonged expiration of an individual suffering with this malady. The patient must fight this power of the enemy *hard;* he must fight it long and *almost* continuously. It is a power that is usually victorious and *only* surrenders after a most *vigorous* and *terrific* struggle. The patient must make up his mind that he will *whip* this power. He should be taught that by this determined fight he may have a *reasonable* hope to conquer the foe. The patient must say to it, *you shall not* shut off my vital air. If you try to make me breathe short I will breathe long. If you try to make me breathe quickly, I will breathe slowly, if you try to make me breathe superficially I will breathe *deeply;* if you try to prolong my expiration I will cut it as short as I can. I will keep my air passages clean and open,—letting as large a volume of pure fresh air into my lungs as possible with each inspiratory movement; the pure air is my salvation, and the *only* method now known to overcome the would be destroyer of my life.

If there is a "specific" for the cure of consumption, it is fresh air; but the patient must be taught how he can best get it into his lungs,—as we know that a very small percentage of the people *actually* know how to breathe. I understand that the School Board of this city has dropped physical culture. I am very sorry indeed to know it. The less physical culture the *more* consumption. The more physical culture, the *less* consumption.

Only a short time since Professor Knowlton, a teacher in one of the public schools, was severly and unjustly criticized because he spoke of the injurious effect of wearing tight fitting clothing and tight corsets. The exception was taken I believe to the mention of the word "corset," while many of the shop windows are full of those horrible disease and death producing instruments.

Every physician of experience knows too well the ill effects of wearing tight corsets. In all my experience in the treatment of women, I have yet to find one woman who would acknowledge that she wore tight corsets; " she always wore them loose." At the same moment she might be laced up so firm and strong that she could not take a full breath though her life depends upon it.

In finishing the subject of fresh air and exercise, a word in reference to climate may be in order. It is impossible to tell just where the climate is best adapted for a certain individual suffering with tuberculosis. Some patients will grow better in one particular location while others will get worse. Those who live in the valleys or uplands should try the sea coast and vice versa. The low foot hills I have found to be the best climatic location as a rule. In the vicinity of Auburn, Placer County, where the altitude is about thirteen hundred feet I believe, is one of the places in particular in California where the change seems to have a beneficial influence with people suffering with pulmonary troubles. The climate at many of the various springs and watering places along the foot hills of the coast range and Sierra Nevada Mountains, also seem to produce a good effect on many of the pulmonary affections. Long sea voyages are also of much benefit to some cases.

The climate of this city likewise, during certain periods of the year along in the fall and winter, seems to be as good as any that may be found. The principal object to a person afflicted with consumption is to find a place where he can be out in the open air as much as possible. *Whenever* he finds a location where he can breathe freely, and other conditions seem to agree with him, this is the place to live until he at least regains his strength. I remember a few years ago I was treating a young man suffering with consumption, and I advised him to try a change of climate in addition to his other treatment. I told him to travel until he found a place where he could breathe easily. He purchased a ticket to Los Angeles and when he reached the Mojave Desert he stopped for a time and he wrote me that it was the first time that he had been able to take a deep breath in two years. He stayed there a few days and felt quite well. He then went on to Los Angeles but got worse again, " caught a fresh cold " he said. He returned to the desert and got better immediately. He stayed there about four or five weeks and then wrote me again. These are his words: " I have not been sick one day since coming here. I sleep well, no night sweats and cough very little. My appetite is much improved. Physically I feel well, but otherwise blue and homesick. After thinking the matter over thoroughly I think I would rather live a little while in San Francisco than to live a long time on this damned desert."

MEDICINAL TREATMENT.—In regard to the hypodermic method with the so called " specific," my experience has been too limited to express an opinion for or against their efficacy. Two of the most valuable remedies in the treatment of this disease I have found to be iron and arsenic. They may be administered singly or together. Many physicians I know prefer to give them in pill form. However, I usually give them in liquid form with a solution of the citrate of potassium and a little lemon or simple syrup. It makes a palatable mixture and very few have been found who could not take and bear it with ease. We know that these two remedies are carried into the general circulation and have a marked influence upon the blood. Strychnine and quinine are also of great value in the treatment of this disease. The arsenic may also be given with them; both are good tonics, improving the appetite and stimulating digestion. I frequently make a prescription of the following, when the iron is omitted: liq. pot. arsenitis; tinct mucis vom; el calisay. and el. lactopeptine after food. This is one of the recipes I give which must be preceded by a *certain* amount of food. Phosphorus is a remedy that is often forgotten in the treatment of tuberculosis. It stimulates the brain and circulation; the functions of the stomach and aids digestion. It may be given in pill form in small doses say, 1-150th of a grain to 1-100 of a grain; or the dilute phosphoric acid may be given, although this preparation does not contain any free phosphorus; still it is a good preparation and it helps to reduce high temperature.

Another favorite prescription of mine is this; dilute phosphoric acid combined with the hypophosphites and a little simple elixir, digitalis is also to be recommended when the heart is weak and overworked. Opium in small doses seems to have in many cases a good effect, not only upon the symptoms, but upon the disease itself.

SYMPTOMS.—When they are severe such as fever, night sweats, coughs, hemoptysis, etc., are to be treated according to the judgment of the attending physician.

INHALATIONS.—Many different antiseptics have been suggested for use by this method. With our present knowledge of this subject I think that chloroform stands at the head of the list for inhalation. If chloroform could be administered properly to patients, no doubt a great many would be benefitted, if not entirely cured by its use. The great objection to it is the difficulty in its safe administration.

It is my opinion, if in the future a drug or medicine will be found that will have a "specific" action upon pulmonary tuberculosis, that remedy will be administered by inhalation; for by this process the substance to be inhaled will be carried directly to the seat of the disease along with the inspired air.

I do not claim that so much can be done in acute miliary tuberculosis, nor in cases in the far advanced stages, where large cavities are already formed in the lungs. I do contend, however, that a large number of the cases suffering with consumption in its early stages can be cured by the methods herein chiefly outlined, if they will carry out the instructions thoroughly and persistently after being taught how to do so.

HOSPITAL NOTES.

Asthma and the Nasal Cavities.

The most common form of nasal asthma is that which is associated with so-called hay fever. It is well known also that asthma may be produced by the presence of nasal polypi, especially so if they are small and situated in certain parts of the nasal cavities. Growths and deviations of the nasal septum and hypertrophies of the turbinated bodies may also be considered as predisposing factors. The object of the foregoing statement is to demonstrate a point, which I have noted, as of marked value in the treatment of nasal asthma. In examining a normal nasal cavity and touching, with the probe, different parts of the mucous membrane, covering the turbinated bodies and septum, it will be noted that certain points are more sensitive than others, producing pain and possibly coughing, sneezing or some other reflex symptom. In *hay asthma*, coming as it does in neurotic subjects, these points of hyperasthesia are most marked and sensitive and not being covered by some irritating neoplasm, as a polypus or septal enlargement, they can be readily localized. That these areas of hyperasthesia seem to be essential in the production of an attack of nasal asthma, is seen in the exacerbation following their mechanical irritation. They occupy various sites and vary in number. One is located at the posterior extremity of the inferior turbinated body and the corresponding part of the septum, another is at the anterior extremity of the same turbinate. A third is found at the anterior part of the septum just within the angle bounding the vestibule and a fourth might be found on the surface of the middle turbinate. If on touching these points coughing or sneezing is produced, it has been my experience, that applying the electric cautery to these points, will produce a marked benefit, if not an absolute cure of the affection.

L. C. Deane.

The General Effect of Supra-Renal Capsule Extract.

I lately had occasion to administer the extract of suprareanl capsule in the form of a lozenge for its local effect upon the pharynx. Each lozenge contained five grains of the extract and the patient used one every two hours, letting it dissolve slowly in the mouth. At the end of a couple of days one tablet every three or four hours was used. The astringent effect of the extract upon the throat was excellent and all that was expected. At the end of four or five days, however, the patient complained of a severe frontal headache, oppression in breathing, and a feeling of constriction about the chest. In the evening of the fifth day she had a severe attack of syncope, and was exceedingly nervous and depressed for several days thereafter. It would appear that the extract is capable of producing constriction of the capillaries after having been absorbed, and that we had in this instance an anemia of the brain, and depression of the heart from its effect upon the coronary vessels.

Redmond Payne.

Phthisis—An Abstract.

As every man is in a measure the master of his own fate, he is also, to a great extent, the master of his health. And this holds true of tuberculosis. The bacilli of consumption are not in themselves so much to be dreaded as the unhealthly tissue which forms a favorable medium for their inception and development. In a vigorous well-nourished body the bacilli are harmless. Pure blood supplied with normal cells fills the healthy body so completely that no space remains for the development of tubercle bacilli. The writer mentions the experiments of Traube, Trudeau, and Brown-Sequard, which proved the fact of the powers of resistance of the healthy well-nourished body to the action of most species of bacilli, mentioning particularly the experiment where Traube injected a quantity of pus into healthy dogs with no ill effects until the amount injected was materially increased; Tradeau's experiments with rabbits inoculated with tubercle bacilli, those being kept in the air and well fed not developing the disease and those kept in dark and ill lighted places developing the disease and dying; Brown-Sequard's similar experiments but superior results on the same lines. He mentioned the treatment of patients on a similar plan by Brown-Sequard, Stokes, Blake, that is saturating the system with pure air and good food, with this conclusion viz: "It must be apparent therefore, that the power of self-disinfection depends chiefly upon two factors: 1. Thorough impregnation with the oxygen of the air. 2. Generous alimentation." Further the author suggests as accesories as congenial temperature, sunshine, clean, dry soil, pure water, sufficient exercise, etc. Particular attention is called to the fact that it is not eating too much but working too little that tends toward ill-health, as it is only by vigorous circulation that each and every part of the body can be supplied with sufficient blood for the proper nourishment of its cell. Attention was called to the cures following the removal of tuberculous tissue from the knee or abdomen, which happy result according to the author is due to the fact that the tuberculous barriers to circulation were removed, and further that by taking away part of a limb, as in an amputation, less is left to be nourished. In connection with outdoor exercise were mentioned the Alpine and Carpathian clubs, which give physical benefits and as well add cultivated perception of beauty in nature. Mountain climbing and gymnastics are recommended, where by increasing the contractive force of the thorax the irritating particles are thrown out and so coughing is allayed. Cases in consumptive families were recounted to show the beneficial effects of practical gymnastics in expanding the chest and making healthful the apices of the lungs where the tubercle bacilli first find lodgement. The important point of exercise and food must keep pace, as firm muscles will not do alone what food, circulation and exercise will do. Climate is mentioned as influencing tuberculous people. Those most favorable for cure are ranges running east and west as they protect from the cold and strong winds. The drainage should be attended to and forests preserved. To the question whether consumption can be cured the writer gives answer "most positively yes —and advances the great number cured in the salubrious states of our country substantiate it."—L. Barkan, Med. Times.

Occidental Medical Times

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THE SIGNING OF THE DEATH CERTIFICATE.

The law regulating the signing of the death certificate demands that the physician must have been in attendance on the deceased at least twenty-four hours. This regulation is simple and plain in its requirements and the Board of Health has always been careful that its conditions have been complied with.

It seems strange that so important a regulation should be seriously abused. Many physicians, presumably ethical, if called to a dying man, have signed the certificate without determining the real cause of death and without having been in attendance during the prescribed time.

Some years ago a man endeavored to shoot his partner in their store; the mother of one of the proprietors, who was an eye witness, dropped dead. A refusal to sign the certificate of death was severely criticised and no explanation would be heard. Another practitioner signed the certificate without knowing the cause of death, without any knowledge of the previous health of the patient and without any acquaintance with the family. Recently a physician who neither saw the patient before nor after death and who had never been employed as physician to the deceased, signed the certificate. Such instances are without doubt of very frequent occurrence. The explanation for such conduct is difficult. Sometimes it is done as a matter of friendship without thoughtful consideration of the seriousness of the act, again to prevent interference on the part of the Coroner or in the attempt to gain further patronage and finally in most instances is a mere question of dollars and cents. Such willful and direct violation of the law is inexcusable on the part of the profession. The practice is very dangerous. The law is a protection to the physician and the public. It protects the physician against blackmail, against suits for malpractice and schemes that might be foisted upon him long after the burial. It protects the community against men whose actions lead directly or indirectly to the death of their fellow men, prevents the concealment of crimes and murder that otherwise would escape the law and is a safeguard against the destruction of life for purely mercenary motives, and yet it is violated without hesitation.

It is not alone, however, against the licensed practitioner, who signs the death certificate in cases of sudden and accidental death that these objections are raised but particularly against those who sign certificates in cases occurring in the practice of midwives, scientists and illegal practitioners. These people have a large following and must therefore have deaths in their practice. They cannot sign the certificate, hence some licensed physician must violate the code of ethics and defy the law to assist a criminal. Just how these demands are met is not clear. Some of our physicians are undoubtedly prostituting themselves by consulting with these people and afterwards singing the certificate; or they do it in direct and open violation of the law. In some instances our unlicensed practitioners, as soon as they see that their patient is going to die, either call in some one or give up the case, or are discharged from further attendance. Rarely are these cases brought to the notice of the Coroner. One instance of an illegal practitioner signing a certificate, no doubt emboldened by frequent successes in escaping punishment for numerous crimes recently occurred in our city. The culprit was merely found guilty of practicing medicine without a license.

This matter then is one demanding the careful scrutiny of the officers of the law and the vigilance of the profession that its members may not bring dishonor and unjust censure upon the whole body. They should rise above such actions and not be inveigled into violating a law through the entreaties of people who have an unfounded dread of a lawful investigation nor should they uphold a class of criminals for a monetary consideration. It is this kind of aid extended to the unlicensed class that enables them to thrive and grow rich where good men are deprived of the necessaries of life.

OCCIDENTAL MEDICAL TIMES AT PARIS.

United States Commission to the Paris Exposition of 1900.

Paris Office, Aug. 31, 1900.

I have the honor to inform you that in accordance with the official announcement of awards at the Paris Exposition of 1900, a grand prize was bestowed upon the exhibit of United States journals, publications and periodicals, and that you are therefore entitled to use this award of grand prize.

Respectfully yours,
A. S. Capehart,
Director of Liberal Arts and Chemical Industries.

BOOK REVIEWS.

HYPNOTISM, A Complete System of Method, Application and Use; Including All That is Known in the Art, Etc., Etc. By L. W. DeLaurence, Professional Hypnotist and Magnetic Healer. Illustrated. Publishers Alhambra Book Company, Chicago.

In this age, when "professors" are as numerous as the "isms" which greet us on every hand, this book comes not so much as a surprise as a beacon, warning us of the existence of shoals of material or physical disease, and as well showing us the bright and sloping path which leads to success, viz., hypnotism. The "professor," the author of the work, tells us that "bodily disease is always mental in origin, mental in action, mental in character, and mental in cure, and but for the action of the life or vital forces on the diseased organs and functions of the body no disease would ever be cured." Presumably the germ theory of disease has not filtered through the "professor's" calvarium; in all probability the value of antitoxins and serotherapy in general has not dawned upon his halting intellect; it is more than likely that antiseptics and germicides are in his eyes a hollow delusion and a sham. That hypnotism has a place in the world of medicine we do not deny, but we consider that place limited to those phases of disease, dependent simply on a disordered mind, and that when there is real pathological condition present it has no more place than "faith cure" or "Christian science," or any other fad.

INTERNATIONAL CLINICS. A Quarterly of Clinical Lectures and Especially Prepared Articles on Medicine, Neurology, Surgery, Therapeutics, Obstetrics, Pediatrics, Pathology, Dermatology, Etc., Etc. Vol. I, Tenth Series, 1900. Philadelphia: J. B. Lippincott Company.

This number, volume I of the tenth series, contains much of special interest, subdivided in a manner rendering it easy of access. The list of authors is an excellent one and their papers fully up to their standard. At this time medical men are particularly interested in the conditions prevailing in the Philippines, and the tropical diseases liable to be met there, as well as the ever-present typhoid fever. Both these topics are presented, the former under title "Medical Condition Existing in the Philippines," by Simon Flexner, M. D., Professor of Pathology at the University of Pennsylvania, and the second by Victor C. Vaughan, M. D., Professor of Hygiene in the University of Michigan; late Major and Division Surgeon, U. S. V. Therapeutics is represented by The Philadelphia Hospital Formulary, by Daniel Hughes, M. D., Chief Resident Physician of the Philadelphia Hospital, and Joseph M. England, Ph. G., Chief Druggist of the Philadelphia Hospital, and "On the Use in Therapeutics of Cacodylic Acid and its Derivatives" by Armand Gautier, M. D., member of the institute; professor at the Paris Medical Faculty, besides others; while Medicine has four papers, by European and American men; one on Lupus Vulgaris; Tuberculin as a Diagnostic Agent; Rheumatism; Rabies, by Geheimrath Brieger, professor of Special Pathology and Therapy at the University of Berlin, Gemany; Neurology is represented by one article; Surgery by a number by Bishop, Morton Dioulafoy; while Edgar, French and Mann handle the articles on Obstetrics and Gynecology. Pathology is given over to one person, Haig, and Diseases of the Eye and Ear are treated of in several articles; Progress of Medicine was presented by the editor, Henry W. Cattell, M. D., and N. J. Blackwood, M. D., showing the advances made in all lines, in special as well as general subjects. It should be read and studied to be appreciated.

SUGGESTIONS TO MEDICAL WRITERS, by George M. Gould, A. M., M. D. Philadelphia Medical Co., Philadelphia, 1900.

Forceful diction, correct construction, pure syntax are much to be desired in any literary production. The scholarly editor of the Philadelphia Medical Journal has devoted considerable time in the preparation of a series of articles entitled "Suggestions to Medical Writers." These have been pertinent, positive and helpful, and in response to many requests are now published in book form, with the addition of an article on the "History and Psychology in Words and one on Medical Paleography," the phase relating to signs and abbreviations. These short sermons, lectures or notes are of value to any medical man, if he intends to write a paper to be read or for publication, or to prepare an "extemporaneous" talk on some medical subject.

THE INTERNATIONAL MEDICAL ANNUAL AND PRACTITIONER'S INDEX. A Work of Reference for Medical Practitioners; 1900, Eighteenth Year. New York: E. B. Treat & Co., Chicago. Price $3.00.

Another volume of this admirable work is before us. And while the past year has not been marked by any remarkable extension of knowledge in Therapeutics, there has been a decided advance in the careful, detailed scientific study of diseases, and an increase in the accuracy with which they are diagnosed and treated. The entire field of medicine and surgery has been satisfactorily covered by the matter presented in this book, and in originality this volume surpasses even itself, and while of necessity the articles in some instances have been condensed it preserves the matter intact, and renders rapid reference more easy. The "Synoptical Index" to the preceding twelve volumes provides in the fullest degree the latest data available, and is of incalculable benefit in furnishing an easy reference for medical and surgical facts. There are a number of noteworthy articles but space prevents the mention of all deserving it. Among them are: Cancer, by Keith W. Monsarat, F. R. C. S.; Malaria, by Major Donald Ross, M. R. C. S., I. M. S., Madras; Diabetic Coma, by F. A. Burrall, M. D., New York; and those in charge of departments are Saml. G. Gant, M. D., Diseases of the Rectum; Prof. Henry Dwight Chapin, A. M., M. D., Pediatrics; Priestly Leech, M. D., F. R. C. S., General Surgery, and others equally noted and equally able in their lines.

A MANUAL OF OBSTETRICAL TECHNIQUE AS APPLIED TO PRIVATE PRACTICE, With a Chapter on Abortion, Premature Labor and Curettage, by Joseph Brown Cooke, M. D., New York, Late Attending Physician St. Mary's Free Hospital for Children, Outdoor Department, Etc., Etc. Philadelphia and London: J. B. Lippincott Company, 1900.

One of the most practical and satisfactory works that it has been our pleasure to peruse is the little volume by Dr. Joseph Brown Cooke, of New York, on "Obstetrical Technic." It contains the most that is good, practicable, clean and sure of any work of equal size, that has come under our notice. As the author himself says he has eliminated the hospital idea entirely as such ideas are not compatible altogether with the work that must be done in the ordinary every-day work of the practicing physician. The idea is constantly kept before the reader's mind that absolute cleanliness can be attained in any case and that it is one of the essentials to success. The work has appendices, which give directions for the nurse in the preparation of the bed and patient; rules for the patient during her pregnancy; and examples of his card system for recording cases. Press work and binding are in consenance with the rest of the volume.